SBIR·STTR
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COURSE 2, TUTORIAL 12

NATIONAL SCIENCE FOUNDATION (NSF)

Every SBIR or STTR program takes on the unique characteristics of the agency in which it resides. The National Science Foundation's SBIR/STTR program is no exception. NSF supports fundamental research and education across all fields of science and engineering. With an annual budget of $7.6 billion, NSF is the funding source for approximately 24% of all Federally supported basic research conducted by America's colleges and universities. The NSF SBIR /STTR program resides within the Division of Industrial Innovation and Partnerships or IIP. Its vision is to drive the expansion of the nation's innovation capacity by stimulating partnerships. It looks to enhance economic competitiveness by catalyzing the transformation of discovery into societal benefits. This vision shapes the implementation of the NSF SBIR/STTR program which funds game changing, disruptive technologies. NSF's solicitations are extremely broad. You identify the problem or opportunity, you propose the technological solution and devise your business strategy. One of the hallmarks of the NSF program is its emphasis on commercialization. NSF was the first agency to have an SBIR program and an emphasis on commercialization has always been its cornerstone.

With an annual budget of approximately $170M, the NSF SBIR/STTR program funds roughly 400 projects a year. The agency's sweet spot is early stage, high risk technology at the pre-seed level. The goal is to conduct research and development that overcomes significant technical hurdles in order to prove the feasibility of a new product, process, or service. Applicants are expected to think deeply about commercialization and develop solutions that could create significant commercial success and/or societal impact.

UNIQUE FEATURES OF NSF PROGRAM

The NSF program is unique in many ways. The Program Directors have deep technical and business expertise and directly provide guidance and mentorship to small businesses. NSF believes strongly in the benefits of connecting with others and facilitates that connection. The program funds highly technical R&D in broad technology areas. These include:

- Education Technologies and Applications (EA)
- Information Technologies (IT)
- Internet of Things (I)
- Semiconductors (S) and Photonic (PH) Devices and Materials
- Electronic Hardware, Robotics and Wireless Technologies (EW)
- Advanced Manufacturing and Nanotechnology (MN)
- Advanced Materials and Instrumentation (MI)
- Chemical and Environmental Technologies (CT)
- Biological Technologies (BT)
- Smart Health (SH) and Biomedical (BM) Technologies

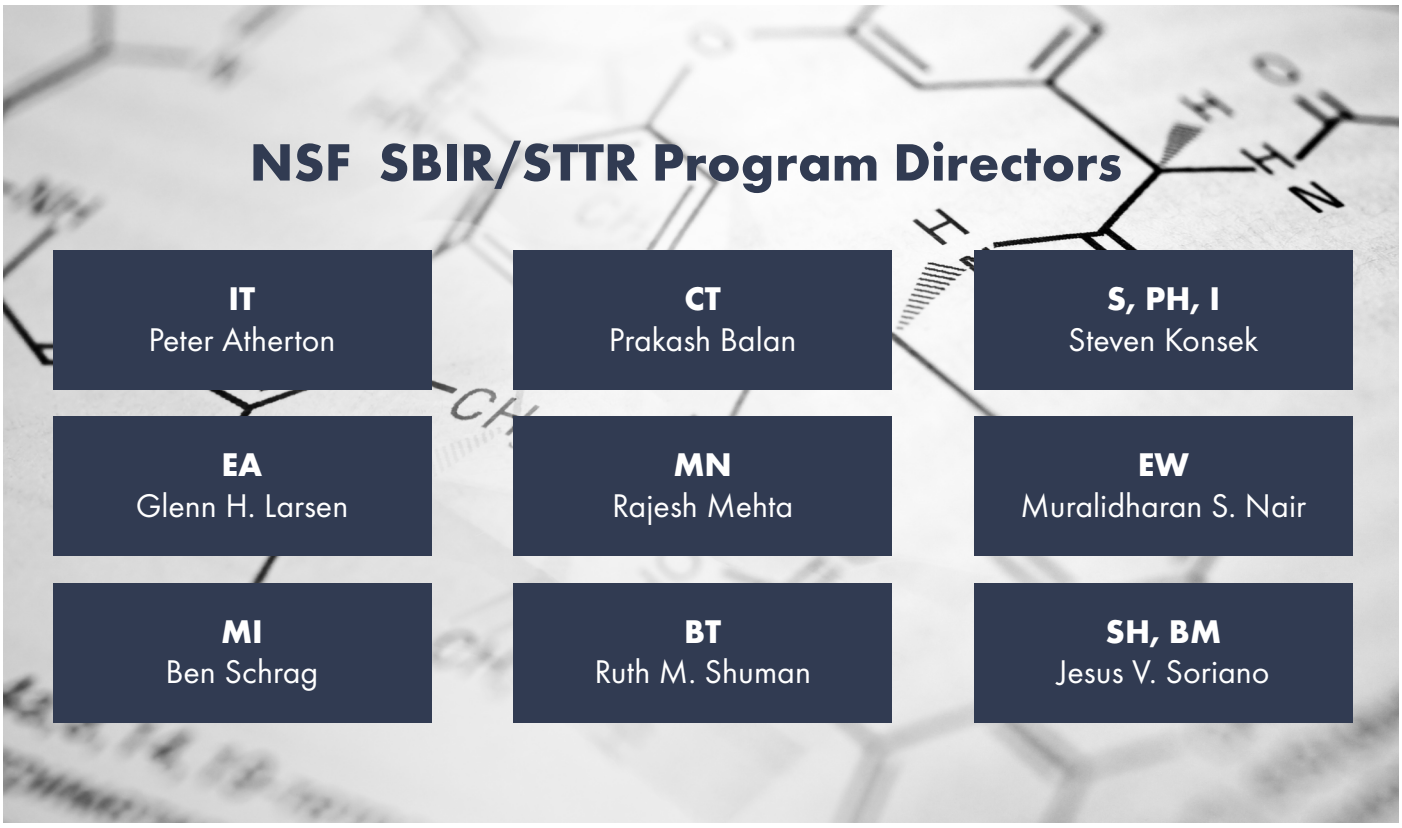

FIGURE 1: Program Directors by Technology Areas

In trying to determine if the NSF SBIR/STTR program is a good opportunity for you and your company– it is recommended that you consider two things: (1) Is this a genuine innovation – an approach that is highly disruptive and technically risky. That is what NSF is looking for – not evolutionary technologies, but those that are revolutionary in nature; (2) The second thing to consider is if you are organized to aggressively validate a market need and pursue commercialization. Again, that is expected at NSF. Potential proposers can solicit Pre-Submission feedback from the appropriate Program Director by preparing and then sending him or her a 1-2 page executive summary by e-mail. Feedback from the Program Director will help the potential applicant gauge whether a project meets the program's intellectual merit and commercial impact criteria. These criteria are clearly described in the solicitation

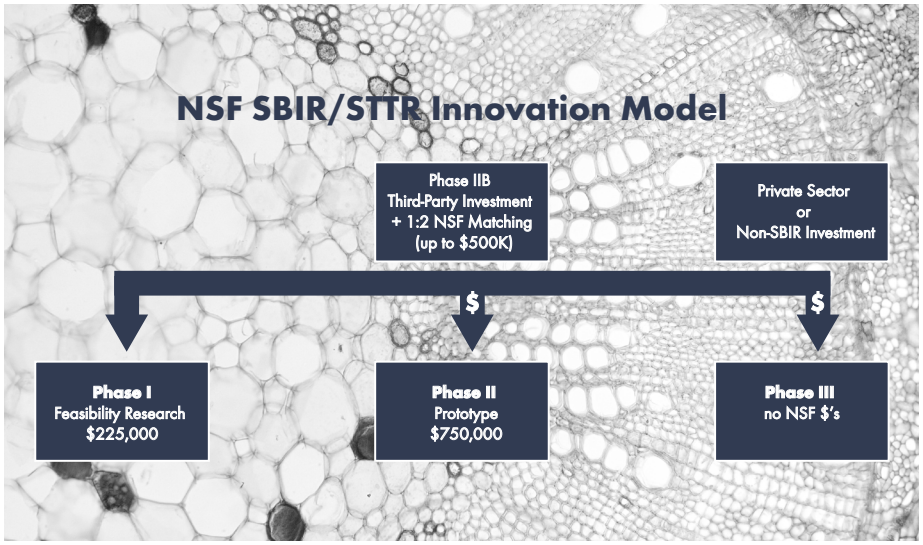

FIGURE 2: Supplemental SBIR/STTR funding in Phase I and Phase II

NSF IS START-UP FRIENDLY

NSF is start-up friendly. Eighty-five percent of awardees have 10 or fewer employees. In fact several dozen Phase I awardees each year incorporate based on receiving a Phase I NSF

COMMERCIAL PARTNERSHIPS					
Phase IIB	Executed 3rd party investment	$500,000	1	Initiated at least 30d prior to Ph II expiration	NSF will match 50% of qualified third-party funds
TECP	Interested commercial/ strategic partner	20% of Ph II amount	1	6 mo. prior to Ph II expiration	
EDUCATIONAL PARTNERSHIPS					
RAHSS	High-School Student	$6,000	2 per year	6 mo. prior to Ph II expiration	Participant stipend only
RET	K-12 or community college teacher	$10,000			
REU	Undergraduate Student	$8,000			
VRS	U.S. Veteran	$10,000			
INSTITUTIONAL PARTNERSHIPS					
Phase IIA	CREST/HBCU-RISE institution	20% of Ph II amount	1	At least 90d prior to Ph II expiration	
Phase IICC	Community College	$40,000	1 per year		
MEMBERSHIP FUNDING					
I/UCRC	I/UCRC center in good standing	$67,500	(2) 1-yr OR (1) 2-yr membership	Min. 90d prior to Ph II expiration	Small business pays 10% of membership cost (min. $5,000)

FIGURE 3: NSF Supplements

award. Approximately seventy-five percent of awardees have never had a prior SBIR/STTR Phase II award from any agency. Seventy percent of awardee companies were incorporated within the past 5 years.

NSF provides grants, not contracts. Phase I awards are up to $225,000 to test feasibility and conduct proof-of-concept research over a 6-12 month period. Phase II awards are up to $750,000 and last 24 months. During Phase II the company is expected to engage in prototype development, scale up and testing. Phase II applicants, by the way must have received a Phase I NSF SBIR/STTR award.

SUPPLEMENTS

The National Science Foundation provides a wide variety of Supplements designed to encourage partnerships and commercialization. At the Phase II level, there is a Phase IIB Supplement. At this stage of development NSF will provide a 1:2 match up to $500K – meaning that if you secure a $1M investment, NSF will provide an additional $500K. Another Phase II supplement is referred to as the TECP which stands for Technology Enhancement for Commercial Partnerships. This program provides a $150,000 supplement to SBIR or STTR awardees in order to pave the way for partnerships between strategic corporate partners and investors. The intent of this supplement is to provide funding for additional research that goes beyond the Phase II project's objectives to meet the technical specifications or additional proof-of-concept requirements of the potential commercialization partner.